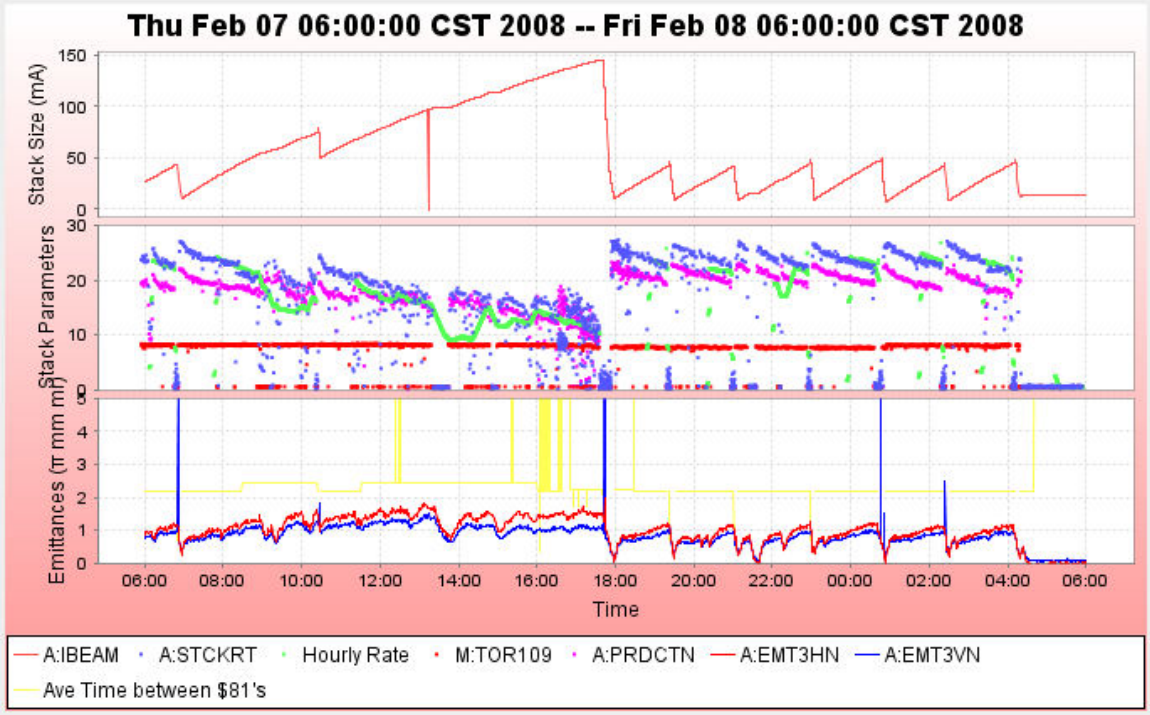
2008-02-08 Friday Morning Pbar Notes

Thursday, February 07, 2008
9:14 PM

Stacking

- Protons on target:
  - Ran 11 turns averaging about 7.6e12 on the day shift, but falling off slightly toward the end.
  - Ran 10 turns for most of the evening shift and into the owl shift, averaging between 7.1 and 7.2e12.
  - On the owl shift we went back to 11 turns, running about 7.5e12.
- Stacking Numbers:
  - Our peak stacking hour was 24.23mA.
  - Average production was 14.7e-6/proton.
  - The production number is down due to the larger 145mA stack.
- The stacking to standby aggregate hung up while trying to check stacktail power. We will look into this today.
- DRF1-4 was turned off on the owl shift.
  - Running 4.3MV.
  - 9.7% hit in circulating debuncher intensity.
  - Back on, but had to learn back in.



Transfers

- We unstacked 367mA in 27 transfers over 8 sets.
  - Accumulator to MI efficiency was 96.7%
  - Accumulator to Recycler efficiency was 90.2%

Column 1 Number_0_Pbar Transfer Shot #	Column 2 Number_1_Recycler Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:IBEAM1), E10	Column 22 Number_21_A:IBEAMB sampled on $94	Unstacked (mA)	Column 23 Number_22_R:BEAMS (R:BEAME0[0])	Column 24 Number_23_R:BEAM (R:BEAME0[1])	Stashed	Acc to RR Eff	Column 27 Number_26_MI DCCT SMALL BEAM	Column 28 Number_27_MI Before Extraction (I:BEAM6), E10	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
		2/8/2008	7:00:00 AM			365.999			330.06	90.18%	353.992	353.883	96.72%	96.69%	27	8
7092	4563	Friday, February 08, 2008	4:12:10 AM	44.988	12.188	32.800	284.436	314.524	30.09	91.73%	32.141	31.559	97.99%	96.22%	3	1
7091	4562	Friday, February 08, 2008	2:24:03 AM	42.188	8.588	33.600	254.570	285.375	30.81	91.68%	32.982	33.375	98.16%	99.33%	3	1
7090	4561	Friday, February 08, 2008	12:47:48 AM	46.388	7.188	39.200	218.571	255.351	36.78	93.83%	38.483	38.149	98.17%	97.32%	3	1
7089	4560	Thursday, February 07, 2008	10:58:54 PM	44.588	9.788	34.800	187.587	219.210	31.62	90.87%	33.523	33.672	96.33%	96.76%	3	1
7088	4559	Thursday, February 07, 2008	9:02:19 PM	42.387	8.988	33.399	157.260	188.087	30.83	92.30%	32.515	33.867	97.35%	101.40%	3	1
7087	4558	Thursday, February 07, 2008	7:24:01 PM	42.588	8.988	33.600	126.686	157.796	31.11	92.59%	33.005	32.232	98.23%	95.93%	3	1
7086	4557	Thursday, February 07, 2008	5:40:59 PM	144.987	10.987	134.000	9.597	127.353	117.76	87.88%	128.528	128.078	95.92%	95.58%	8	1
7085	4555	Thursday, February 07, 2008	10:27:24 AM	74.988	50.388	24.600	276.293	297.368	21.08	85.67%	22.815	22.951	92.74%	93.30%	1	1

Studies

- Debuncher Momentum Cooling Gain Ramping (http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=59&scroll=false&load=)
  - Compared data with gain ramping on and off, and tried a number of different gain ramps for the four Debuncher momentum cooling systems.
  - For the measurments, we needed SA #1 (bunch rotation), SA #2 (Accumulator longitudinal profile) and the D/A VSA (used for Debuncher/Accumulator bend field alignment). In addition, taking the D/A VSA breaks the stacktail monitor.
  - Initial indications are that we were not able to make significant improvements.
  - Data is being analyzed offline.

Requests

- Rings access
  - Test sprare septum PS modules. Septum power supply transformers. We had no spares on the system.
  - DRF1-3, DRF1-4 and DRF1-7 all have tunnel problems.

Other Notes:

- Paul's Numbers
  - Most in an hour: 24.23 mA at Fri Feb 08 01:53:03 CST 2008
  - Best: 25.19 mA on 30-Jan-08
  - Average Production 14.70 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 6.90 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack 145.22 mA Best: 271.01 mA on 11/14/2007

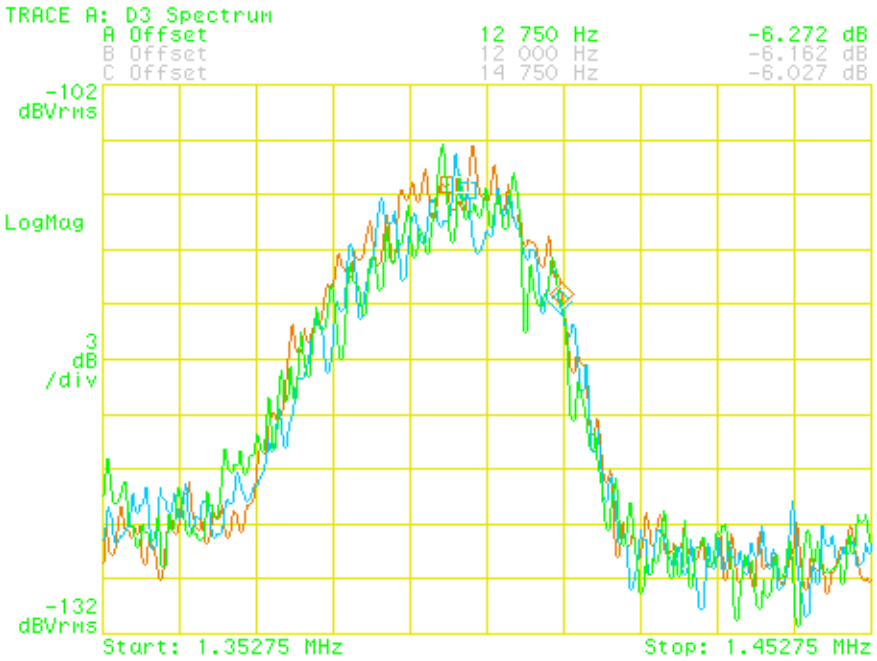
- Al's Numbers
  - Stacking
    - Pbars stacked: 340.94 E10
    - Time stacking: 19.77 Hr
    - Average stacking rate: 17.25 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 31554
    - Number of pulses with beam: 27690
    - Fraction of up pulses was: 87.75%
  - The uptime's effect on the stacking numbers

The uptime's effect on the stacking numbers
- Corrected time stacking: 17.34 Hr
- Possible average stacking rate: 19.66 E10/Hr

- Recycler Transfers
  - Pbars sent to the Recycler: 364.69 E10
  - Number of transfers : 28
  - Number of transfer sets: 8
  - Average Number of transfer per set: 3.50
  - Time taken to shoot: 01.29 Hr
  - Time per set of transfers: 09.66 min
  - Transfer efficiency: 91.11%

- Other Info
  - Average POT : 7.41 E12
  - Average production: 16.62 pbars/E6 protons

- Gain Ramping



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